

What is claimed is:

1. A fixing device using induction heating for causing alternating current to pass through an electromagnetic induction coil, which is arranged so as to be close to an endless member having a metal layer of a conductive material, to cause said endless member to generate heat to heat a member to be fixed, wherein going and returning portions of one turn of said coil are spaced from each other by a predetermined distance or more so as to inhibit electromagnetic fields formed by said going and returning portions from being canceled out.
2. A fixing device using induction heating as set forth in claim 1, wherein said coil is wound as a multiplex winding, and going and returning portions of the innermost turn of said coil are spaced from said predetermined distance or more.
3. A fixing device using induction heating as set forth in claim 1, wherein said endless member is a roller.
4. A fixing device using induction heating for causing alternating current to pass through an electromagnetic induction coil, which is arranged so as to be close to an endless member having a metal layer of a conductive material, to cause said endless member to generate heat to heat a member to be fixed, wherein said coil is wound so as to extend in axial directions of said endless member, and a gap between said coil and an object induction-heated by said coil is set so as not to be less than in end portions of said coil.
5. A fixing device using induction heating as set forth in claim 4, wherein said coil is wound onto a long core so as to extend in longitudinal directions thereof, said core having an end portion having a thin neck portion, said coil being wound onto said neck portion in said end portion of said core to inhibit the outside surface of said coil wound onto said core from approaching said endless member even if a cross section of said coil is deformed by a tension caused by the winding of said coil.

6. A fixing device using induction heating as set forth in claim 4, wherein said endless member is a roller.

7. A fixing device using induction heating for causing alternating current to pass through an electromagnetic induction coil, which is arranged so as to be close to an endless member having a metal layer of a conductive material, to cause said endless member to generate heat to heat a member to be fixed, wherein said coil is wound as a multiplex winding so as to extend in axial directions of said endless member, and a gap between an inside turn of said coil and an object induction-heated by said inside turn of said coil is set to be substantially uniform even in both a central portion and an end portion of said coil.

8. A fixing device using induction heating as set forth in claim 7, wherein said endless member is a roller.

9. A fixing device using induction heating for causing alternating current to pass through an electromagnetic induction coil, which is arranged so as to be close to an endless member having a metal layer of a conductive material, to cause said endless member to generate heat to heat a member to be fixed, wherein said coil is wound as a multiplex winding so as to extend in axial directions of said endless member, and a heat generation distribution of an object to be heated is optimized by changing distances between the outermost turn of said coil and other turns thereof inward of a core.

10. A fixing device using induction heating as set forth in claim 9, wherein said endless member is a roller.

11. A fixing device using induction heating for causing alternating current to pass through electromagnetic induction coils, which are arranged so as to be close to an endless member having a metal layer of a conductive material, to cause said endless member to generate heat to heat a member to be fixed,

wherein said coil is wound so as to extend in axial direction of said endless member, and a turn of said coil next to a certain turn thereof is sequentially wound onto the outside of said certain turn, said certain turn having a U-turn portion, at least a part of which is bent so as to have a radius R of curvature, and wherein a relationship between said radius R and a distance D between going and returning portions of said certain turn is set to be a predetermined relationship.

12. A fixing device using induction heating as set forth in claim 11, wherein said relationship between said radius R and said distance D is $R < D/2$.

13. A fixing device using induction heating as set forth in claim 11, wherein said relationship is satisfied with respect to at least one turn of said coil.

14. A fixing device using induction heating as set forth in claim 11, wherein said relationship is satisfied with respect to at least one end portion of bent portions of said coil in both ends of said core.

15. A fixing device using induction heating as set forth in claim 11, wherein said certain turn of said coil has a U-turn portion in an end portion thereof, said U-turn portion being bent so as to have two radii R of curvature at corners thereof, and said radii R meets said predetermined relationship.

16. A fixing device using induction heating as set forth in claim 11, wherein said endless member is a roller.

17. A method for producing a fixing device using induction heating for causing alternating current to pass through an electromagnetic induction coil, which is arranged so as to be close to an endless member having a metal layer of a conductive material, to cause said endless member to generate heat to heat a member to be fixed, wherein said coil is wound onto an outside

peripheral surface of a substantially cylindrical core so as to extend in axial directions thereof, said core having core bodies, onto which a first turn of said coil is wound to be supported, on said outside peripheral surface at two places facing each other in radial directions, each said core body extending in said axial directions, and

wherein said first turn of said coil is wound onto each of said core body, and then, the next turn of said coil is wound next to said first turn to sequentially carry out this procedure so that substantially half of said coil is wound onto said outside peripheral surface of said core, and wherein after said coil is wound by said procedure to cover substantially half of said outside peripheral surface of said core with respect to at least one of said two core bodies, said coil is wound by said procedure with respect to the other core body to cover the remaining half of said outside peripheral surface of said core, so that said coil substantially covers the whole surface of said outside peripheral surface of said core.

18. A method for producing a fixing device using induction heating as set forth in claim 17, wherein said endless member is a roller.

19. A method for producing a fixing device using induction heating as set forth in claim 17, wherein said coil is wound as a multiplex winding sequentially from the innermost turn of said coil, and wherein the outermost turn of said coil is wound from one end to a central portion, and after said coil is wound to the vicinity of said central portion, said coil is wound from the other end toward said central portion.

20. A method for producing a fixing device using induction heating as set forth in claim 19, wherein said endless member is a roller.

21. A fixing device using induction heating for causing alternating current to pass through an electromagnetic induction

coil, which is arranged so as to be close to an endless member having a metal layer of a conductive material, to cause said endless member to generate heat to heat a member to be fixed, wherein said coil has non-central portions of non-dense coil portions on both ends of said coil in axial directions, and the vicinity of said non-central portions are provided so as to face a fixed portion of said member to be fixed.

22. A fixing device using induction heating as set forth in claim 21, wherein said endless member is a roller.

23. A fixing device using induction heating for causing alternating current to pass through an electromagnetic induction coil, which is arranged so as to be close to an endless member having a metal layer of a conductive material, to cause said endless member to generate heat to heat a member to be fixed, wherein two outgoing lines of going and returning portion of said coil are attached to each other.

24. A fixing device using induction heating as set forth in claim 23, wherein said two outgoing lines are parallel to each other.

25. A fixing device using induction heating as set forth in claim 23, wherein said two outgoing lines are twisted.

26. A fixing device using induction heating as set forth in claim 23, wherein said coil is formed of an insulating wire.

27. A fixing device using induction heating as set forth in claim 23, wherein said coil is formed of a double insulating wire.